CERTIFICATE

By Authority Of
THE UNITED STATES OF AMERICA
Legally Binding Document

By the Authority Vested By Part 5 of the United States Code § 552(a) and Part 1 of the Code of Regulations § 51 the attached document has been duly INCORPORATED BY REFERENCE and shall be considered legally binding upon all citizens and residents of the United States of America. *HEED THIS NOTICE*: Criminal penalties may apply for noncompliance.

* * *

Document Name: SAE J573D (1968): Lamp Bulbs and Sealed Units

CFR Section(s): 49 CFR 571.108

Date of Action: 41 FR 35522, Aug. 23, 1976

APPROVED

Official Incorporator:
THE EXECUTIVE DIRECTOR
OFFICE OF THE FEDERAL REGISTER
WASHINGTON, D.C.

SOCIETY OF AUTOMOTIVE ENGINEERS, INC. • TWO PENNSYLVANIA PLAZA • NEW YORK, NEW YORK 10001

LAND
SEA
AIR
SPACE

TECHNICAL REPORT J573d

© Society of Automotive Engineers, Inc. 1969. This report is scheduled for the 1970 SAE Handbook.

LAMP BULBS AND SEALED UNITS—SAE J573d

SAE Standard

Report of Lighting Division approved March 1918 and last revised by Lighting Committee December 1968.

Scope—Many of the lighting devices on motor vehicles are legally required and are essential to safe operation on the highway. To maintain performance, it is important that the bulb and sealed unit types employed be readily available, when needed, throughout the country in normal service channels. Therefore, this SAE Standard lists an assortment of current popular types, together with their characteristics, which are recommended for use wherever practicable. It is recognized that because of constantly changing and improving technology, the list may be incomplete. Also, instances may arise in the design of some devices which require the employment of other types while achieving the desired performance.

TABLE 1—MOTOR-VEHICLE ELECTRIC LAMP BULBS (FOR NEW DESIGNS OR ORIGINAL EQUIPMENT)

Typical Services[a]	Trade No.	Design					Rated Average Lab Life Design V, hr	Filament				Bulb Type[b]	Base	
		Mean Spherical, cp	CP Tolerance ±, %	Volts	Amps	Amp Tolerance ±, %		Type	Light Center Length (LCL), in.	LCL Tolerance, ±	Axial Alignment Tolerance, ± in.		Type[b]	Description
							6-V Circuits							
A, C	51	1	20	7.5	0.22	10	1000	C-2R	0.500	0.093	0.093	G-3-1/2	A-1	Min Bay.
A	55	2	12	7.0	0.41	7	500	C-2R	0.562	0.093	0.093	G-4-1/2	A-1	Min Bay.
L, M, P, T	63	3	8	7.0	0.63	5	1000	C-2R	0.750	0.093	0.093	G-6	B-1	SC Bay.
E	81[c]	6	9	6.5	1.02	5	500	C-2R	0.750	0.093	0.093	G-6	B-1	SC Bay.[f]
E	209	15	9	6.5	1.78	5	100	C-6	1.062	0.062	0.062	B-6	B-2	DC Bay.[f]
E	210	15	9	6.5	1.78	5	100	C-6	1.062	0.062	0.062	B-6	B-1	SC Bay.[f]
E, D, S	1129	21	7	6.4	2.63	4	200	C-6	1.250	0.040	0.040	S-8	B-1	SC Bay.[f]
B	1133	32	7	6.2	3.91	4	200	C-2R	1.250	0.040	0.040	RP-11	C-2	DC Bay.[f]
D, L, S, T, P	1154	21	8	6.4	2.63	5	200	C-6	1.250	0.040	0.040	S-8	—	Indexing
		3	12	7.0	0.75	8	1000	C-6	e	e	e	—	—	
							12-V Circuits							
A, C	53	1	20	14.4	0.12	10	1000	C-2V	0.500	0.093	0.093	G-3-1/2	A-1	Min Bay.
A, C, H	53X	1	20	14.4	0.12	10	1000	C-2F	0.500	0.093	0.093	G-3-1/2	A-1	Min Bay.
A, C	57	2	20	14.0	0.24	10	500	C-2V	0.562	0.093	0.093	G-4-1/2	A-1	Min Bay.
A, C, H	57X	2	20	14.0	0.24	10	500	C-2F	0.562	0.093	0.093	G-4-1/2	A-1	Min Bay.
A, L, M, T	67	4	15	13.5	0.59	8	d	C-2R	0.812	0.093	0.093	G-6	B-1	SC Bay.
E, M	89	6	15	13.0	0.58	8	750	C-2R	0.750	0.093	0.093	G-6	B-1	SC Bay.
E, M	90	6	15	13.0	0.58	8	750	C-2R	0.750	0.093	0.093	G-6	B-2	DC Bay.
A, C	158	2	20	14.0	0.24	10	500	C-2V	0.562	0.093	0.093	T-3-1/4	W-2	Wedge
A, C	161	1	20	14.0	0.19	10	1500	C-2F	0.562	0.093	0.093	T-3-1/4	W-2	Wedge
A, C	194	2	20	14.0	0.27	10	1500	C-2F	0.562	0.040	0.060	T-3-1/4	W-2	Wedge
A, E, H, M, T	631	6	20	14.0	0.63	10	1000	2C-2R	0.750	—	—	G-6	B-1	SC Bay.
E	1003	15	9	12.8	0.94	5	100	C-6	1.062	0.062	0.062	B-6	B-1	SC Bay.[f]
E	1004	15	9	12.8	0.94	5	100	C-6	1.062	0.062	0.062	B-6	B-2	DC Bay.[f]
D, L, P, S, T	1034	32	10	12.8	1.80	5	200	C-6	1.250	0.040	0.040	S-8	C-2	DC Bay.[f]
		3	12	14.0	0.59	8	d	C-6	e	e	e	—	—	Indexing
B, D, S	1073	32	10	12.8	1.80	5	200	C-6	1.250	0.040	0.040	S-8	B-1	SC Bay.[f]
B, D, S	1141	21	10	12.8	1.44	6	500	C-6	1.250	0.040	0.040	S-8	B-1	SC Bay.[f]
B, D, S	1142	21	10	12.8	1.44	6	500	C-6	1.250	0.040	0.040	S-8	B-2	DC Bay.[f]
A, H, M, T, L	1155	4	12	13.5	0.59	8	d	2C-2R	0.812	—	—	G-6	B-1	SC Bay.[f]
B, D, H, S	1156	32	10	12.8	2.10	5	600	C-6	1.250	0.040	0.040	S-8	B-1	SC Bay.[f]
D, H, L, P, S, T	1157	32	10	12.8	2.10	5	600	C-6	1.250	0.040	0.040	S-8	C-2	DC Bay.[f]
		3	12	14.0	0.59	8	d	C-6	e	e	e	—	—	Indexing
G	1195	50	12	12.5	3.00	7	300	C-2V	1.250	0.030	0.030	RP-11	B-1	SC Bay.[f]
G	1507	50	12	12.5	3.00	7	300	C-2V	0.875	0.010	0.010	RP-11	F-1	SC Prefocus
A, C, H	1895	2	20	14.0	0.27	10	1500	C-2F	0.562	0.093	0.093	G-4-1/2	A-1	Min Bay.

[a] Letter designations are defined as follows: A-Instrument; B-Back-up; C-Indicator; D-Turn signal; E-Interior; G-Auxiliary service; H-Heavy duty service; L-License; M-marker, clearance, and identification; P-Parking; S-Stop; T-Tail.

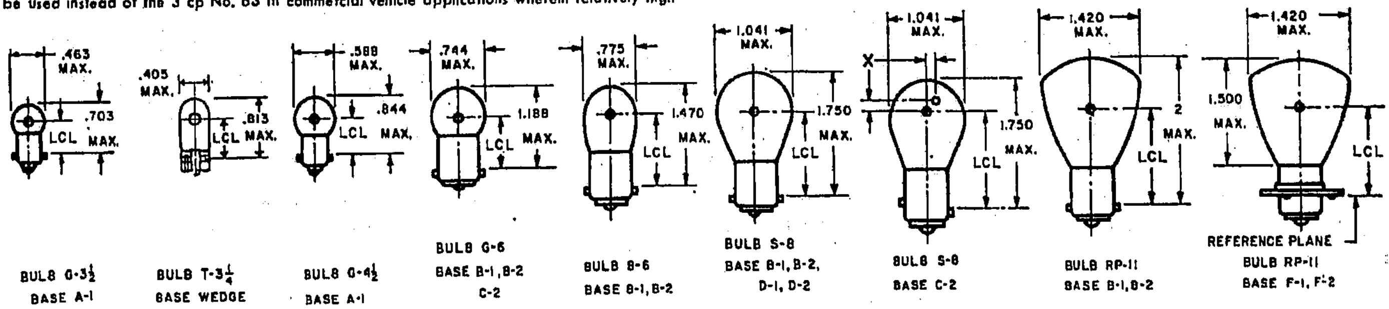
[b] See Figs. 1-3.

[c] When bulb No. 81 is operated at 5.5 V, it supplies approximately 3 cp. Threfore, it may be used instead of the 3 cp No. 63 in commercial vehicle applications wherein relatively high voltage drop is experienced at the end of long lines.

[d] Over 2000 hr at 14 V.

[e] Filament spacing is denoted by dimension X(0.110 × 0.020 in.) in Fig. 1.

[f] Plane of pins with respect to filament is 90 ± 15 deg. On remaining types filament orientation is random.



BULB G-3½ BASE A-1

BULB T-3¼ BASE WEDGE

BULB G-4½ BASE A-1

BULB G-6 BASE B-1, B-2 C-2

BULB B-6 BASE B-1, B-2

BULB S-8 BASE B-1, B-2, D-1, D-2

BULB S-8 BASE C-2

BULB RP-11 BASE B-1, B-2

BULB RP-11 BASE F-1, F-2

FIG. 1—BULB TYPES (THE LIGHT CENTER LENGTH (LCL) IS MEASURED FROM THE CENTER OF THE FILAMENT)

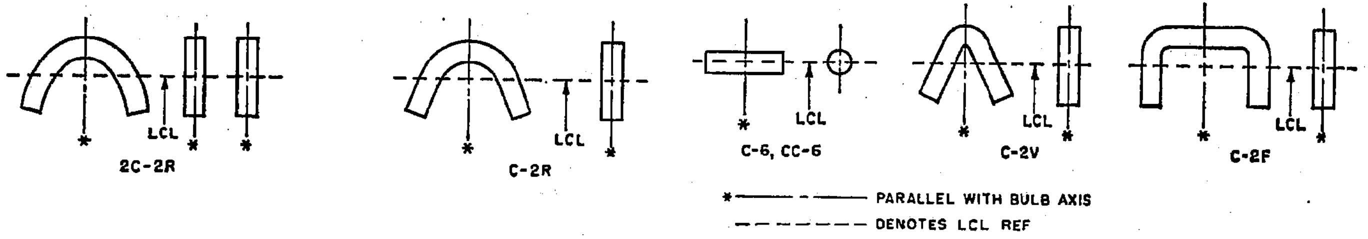
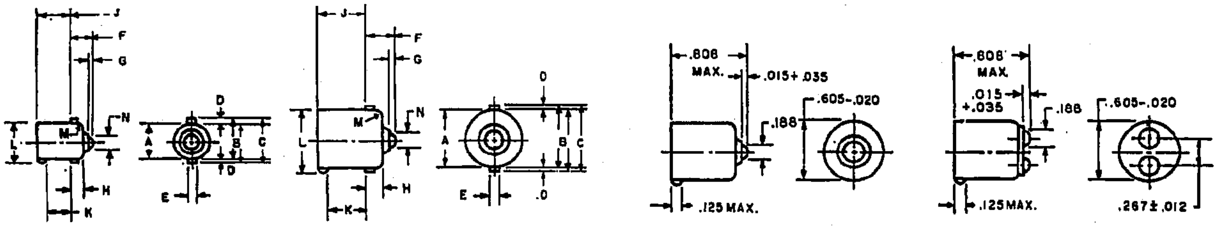


FIG. 2—FILAMENT TYPES

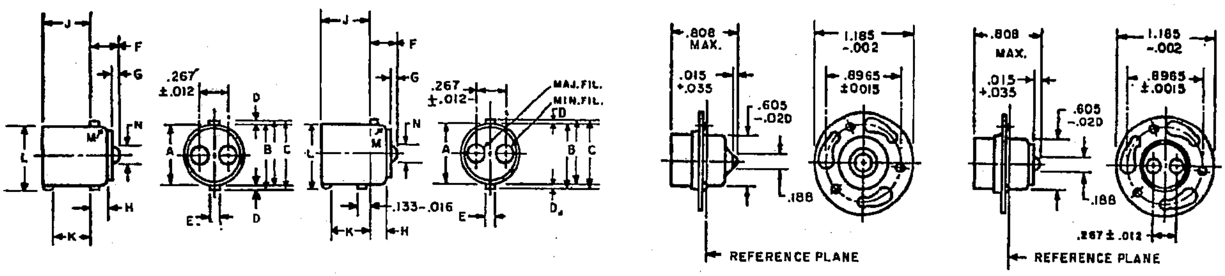


TYPE A-1
MINIATURE BAYONET
SINGLE CONTACT

TYPE B-1
BAYONET
SINGLE CONTACT

TYPE D-1
PINLESS
SINGLE CONTACT

TYPE D-2
PINLESS
DOUBLE CONTACT



TYPE B-2
BAYONET
DOUBLE CONTACT

TYPE C-2
INDEXING BAYONET
DOUBLE CONTACT

TYPE F-1
PREFOCUS
SINGLE CONTACT

TYPE F-2
PREFOCUS
DOUBLE CONTACT

FIG. 3—BASE TYPES

TABLE 2—SEALED UNITS (FOR NEW DESIGNS OR ORIGINAL EQUIPMENT)

Type of Service[a]	Trade No.	Design		Rated Average Lab. Life, hr	Max Amps at Design Volts	Filament Type	Bulb Type	Dimensional Specification	Terminals	
		Watts	Volts						No.	Type
6-V Circuits at 7.0V[b]										
H	6006	50–40	6.1–6.2	75–150	8.60–6.80	C-6—C-6	PAR 56	Fig. 1[c]	3	Lugs
F	4012	35	6.2	80	5.93	C-6	PAR 46	Fig. 1[d]	2	Screws
F	4015	35	6.2	80	5.93	C-6	PAR 36	Fig. 2[d]	2	Screws
S	4515	30	6.4	35	4.95	C-6	PAR 36	Fig. 2[d]	2	Screws
S	4535	30	6.4	35	4.95	C-6	PAR 46	Fig. 1[d]	2	Screws
12-V Circuits at 14.0V[b]										
H	4001	37.5	12.8	200	3.14	C-6	PAR 46	Fig. 3[c]	2	Lugs
H	4002	37.5–50	12.8–12.8	200–320	3.14–4.20	C-6—C-6	PAR 46	Fig. 4[c]	3	Lugs
H, X	4005	37.5–50	12.8–12.8	240–400	3.14–4.20	C-6—C-6	PAR 46	Fig. 4[c]	3	Lugs
H, X	4006	37.5	12.8	240	3.14	C-6	PAR 46	Fig. 3[c]	2	Lugs
S	4404	30	12.8	35	2.58	C-6	PAR 36	Fig. 2[d]	2	Screws
S	4405	30	12.8	35	2.58	CC-6	PAR 36	Fig. 2[d]	2	Screws
F	4412	35	12.8	100	2.93	C-6	PAR 46	Fig. 1[d]	2	Screws
F	4415	35	12.8	100	2.93	C-6	PAR 36	Fig. 2[d]	2	Screws
H	6012	50–40	12.8–12.8	200–320	4.20–3.36	C-6—C-6	PAR 56	Fig. 1[c]	3	Lugs
H, X	6013	50–40	12.8–12.8	240–400	4.20–3.36	C-6—C-6	PAR 56	Fig. 1[c]	3	Lugs

[a] Letter designations are defined as follows: F-Fog; H-Sealed Beam Headlamp; S-Spot; X-Heavy Duty Service.

[b] For convenience and simplification of life testing, all lamps designed for use on 6V circuits are life tested at 7V, and all lamps designed for use on 12V circuits are life tested at 14V. In general the life at average service voltages is longer.

[c] See SAE J571.

[d] See SAE J760.

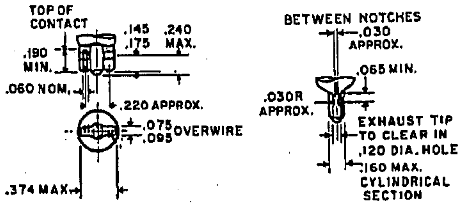
TABLE 3—BASE DIMENSIONS[a]

Dimension	Bayonet (B-1, B-2, C-2)	Miniature (A-1)	Dimension	Bayonet (B-1, B-2, C-2)	Miniature (A-1)	Dimension	Bayonet (B-1, B-2, C-2)	Miniature (A-1)
A[c]	0.5925–0.6025	0.354–0.366	E	0.074–0.080	0.061–0.067	K	0.350 min	0.180 min
B	0.616–0.636	0.384–0.400	F	0.249–0.316[b]	0.180–0.255	L	0.645 max	0.410 max
C	0.668 max	0.432 max	H	0.138–0.170	0.095–0.131	M	0.032 nom	0.032 nom
D	0.025 min	0.025 min	J	0.492–0.508	0.300–0.324	N	0.188 nom	0.156 nom

[a] Apply to bases on complete lamp bulbs.

[b] On bases B-2, C-2, D-2, and F-2 heights of solder contacts are to be within 0.020 in. of each other.

[c] Both minimum and maximum to be measured with ring gage. Applies to all parts of base except within 1/8 in. from bulb end.



TYPE W-2
WEDGE BASE

FIG. 4—BASE TYPES (BASELESS BULBS)

SAE Technical Board Rules and Regulations

All technical reports, including standards approved and practices recommended, are advisory only. Their use by anyone engaged in industry or trade is entirely voluntary. There is no agreement to adhere to any SAE Standard or SAE Recommended Practice, and no commitment to conform to or be guided by any technical report. In formulating and approving technical reports, the Technical Board, its Councils and Committees will not investigate or consider patents which may apply to the subject matter. Prospective users of the report are responsible for protecting themselves against liability for infringement of patents.

Printed in U.S.A.